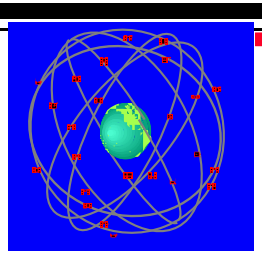
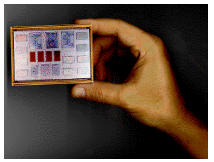
Navigation and Radio Metric Tracking

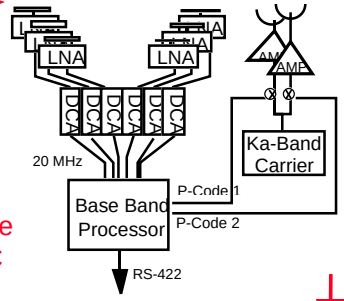
- **Overall Objective**
  - Develop new tracking, guidance, navigation, and control (GNC) technologies to enable and enhance performance during challenging mission profiles which require (i) autonomy, (ii) formation flying (iii) coupling of attitude and flight path determination, or involve (i) new force environments, (ii) savings in operational costs, (iii) new measurement hardware, (iv) unique science opportunities.
- **Goals and Products**
  - Integrated GNC architectures and elements to lower development and operations costs, and enable new capabilities for solar system exploration
  - GNC instrument designs and prototypes, including microGPS, Autonomous Formation Flyer (AFF) sensor, and Mars nav/comm transceivers
  - Real-time systems for autonomous planetary in situ navigation, formation flying, rendezvous scenarios
  - Software/algorithms to lower DSN navigation costs



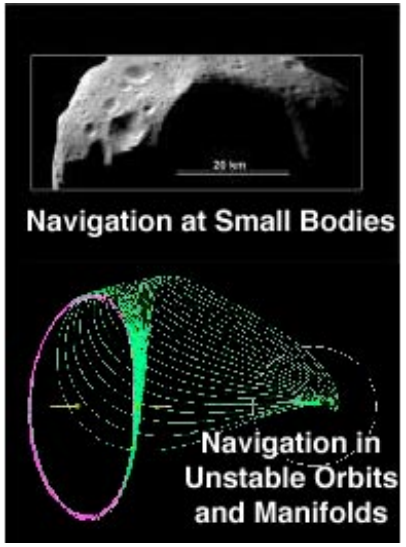
GPS

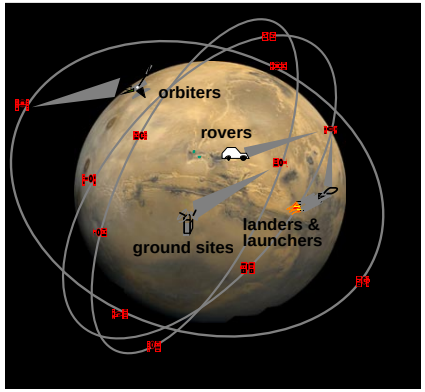


"On-A-Chip" hardware for autonomous GNC



Autonomous Formation Flyer (AFF) navigation and telecom transceiver





Autonomous, in situ GNC systems design and development